GREEN SPACE, HEALTH INEQUALITY, AND PREGNANCY

Payam Dadvand, *Centre for Research in Environmental Epidemiology (CREAL), Spain*
Audrey de Nazelle, *Centre for Research in Environmental Epidemiology (CREAL), Spain*
Francesc Figueras, *University of Barcelona, Spain*
Xavier Basagaña, *Centre for Research in Environmental Epidemiology (CREAL), Spain*
Jason Su, *University of California Berkeley, US*
Elmira Amoly, *Tehran University, Iran*
Michael Jerrett, *University of California Berkeley, US*
Martine Vrijheid, *Centre for Research in Environmental Epidemiology (CREAL), Spain*
Jordi Sunyer, *Centre for Research in Environmental Epidemiology (CREAL), Spain*
Mark J. Nieuwenhuijsen, *Centre for Research in Environmental Epidemiology (CREAL), Spain*

Background and Aims: Green spaces have been suggested to improve both perceived and objective physical and mental health and well-being; however, there is no available evidence on the impact of green spaces on pregnancy. The aim of this study was to investigate the impact of surrounding greenness and proximity to major green spaces on birth weight (BW) and gestational age at delivery (GA) and to describe the effect of socioeconomic status (SES) on this relationship.
Methods: This study was based on a cohort of births (N=8246) that occurred in a major university hospital in Barcelona during 2001-2005. We determined surrounding greenness as average of Normalized Difference Vegetation Index (NDVI) (Landsat ETM+ at 30mx30m resolution) in a buffer of 100m around each maternal place of residence. To address proximity to major green spaces, a binary variable was created indicating whether maternal residential address falls within a buffer of 500m from boundaries of a major green space, according to the *Ecologic Map of Barcelona*. SES data at both individual (ethnicity, occupation, and education) and area (MEDEA index at census tract level) was obtained for each participant. For each indicator of green exposure, linear regression models were constructed to estimate change in BW and GA adjusted for relevant covariates.
Results: None of the indicators of green exposure were associated with BW and GA. After stratifying the analysis according to education level, we detected an increase in BW (grams) among lowest education level group (N=164) who were either living close to a major green space (Regression coefficient (95% confidence Interval (CI)) of 189.8 (23.9, 355.7) or had higher surrounding NDVI (Regression coefficient (95% CI) of 436.3 (43.1, 829.5)). This finding was not observed for GA.
Conclusions: Our study suggests a beneficial effect of exposure to green spaces on birth weight among lower SES groups.